5 Appendices

5.0 Appendices

5.1 References


Benson, D and Howell, J 1995, *Taken for granted – the bushland of Sydney and its suburbs*, Kangaroo Press in association with the Royal Botanic Gardens Sydney, Kenthurst, NSW.


Benson D. & Howell, Jocelyn 1994, *Natural Vegetation of the Sydney Area Map*, 1:100,000 Series – Sydney, Royal Botanic Gardens, Sydney NSW.


City of Sydney 2011, *Street Tree Master Plan*, Unpublished document of the City of Sydney, Sydney by Arterra Design Pty Ltd.

Lane Cove Council 2013, *Street Tree Master Plan*, Unpublished document of Lane Cove Council, Sydney by Arterra Design Pty Ltd.


Sharpe, A. Lawrence, Joan. 1999, *Pictorial history of eastern suburbs*, Kingsclear Books, Crows Nest, Sydney, NSW.


Tovey E, et al. 2011, *London Plane Tree bioaerosol exposure and allergic sensitisation in Sydney, Australia* (Dr Euan Tovey MSc,PhD, et al 2011 Dec).
5.2 ABC Priority Streets

During fieldwork and review for the preparation of the Street Tree Master Plan 2013 the following streets were identified as ‘priority’ streets for the expansion or the introduction of Aerial Bundled Conductor overhead wiring. This has been based primarily on identifying streets where existing tree health and forms would be substantially improved or where recent street tree planting has been undertaken and the introduction of ABC will prevent the need for disfiguring pruning practices needing to be employed as the tree encroaches on the wires.

<table>
<thead>
<tr>
<th>Precinct Name</th>
<th>Street Name</th>
<th>Precinct Name</th>
<th>Street Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.Bellevue Hill</td>
<td>Bellevue Road</td>
<td>7.Rose Bay</td>
<td>Courtenay Road</td>
</tr>
<tr>
<td>1.Bellevue Hill</td>
<td>Bennelong Crescent</td>
<td>7.Rose Bay</td>
<td>Dover Road</td>
</tr>
<tr>
<td>1.Bellevue Hill</td>
<td>Blaxland Road</td>
<td>7.Rose Bay</td>
<td>Dudley Road</td>
</tr>
<tr>
<td>1.Bellevue Hill</td>
<td>Bundarra Road</td>
<td>7.Rose Bay</td>
<td>Faraday Avenue</td>
</tr>
<tr>
<td>1.Bellevue Hill</td>
<td>Kambala Place</td>
<td>7.Rose Bay</td>
<td>Mitchell Road</td>
</tr>
<tr>
<td>1.Bellevue Hill</td>
<td>Kulgoa Road</td>
<td>7.Rose Bay</td>
<td>Newcastle Street</td>
</tr>
<tr>
<td>1.Bellevue Hill</td>
<td>Lamb Street</td>
<td>7.Rose Bay</td>
<td>Spencer Street</td>
</tr>
<tr>
<td>1.Bellevue Hill</td>
<td>Old South Head Road</td>
<td>7.Rose Bay</td>
<td>Wilberforce Avenue</td>
</tr>
<tr>
<td>1.Bellevue Hill</td>
<td>Riddell Street</td>
<td>8.Vaucluse</td>
<td>Beach Avenue</td>
</tr>
<tr>
<td>1.Bellevue Hill</td>
<td>Rivers Street</td>
<td>8.Vaucluse</td>
<td>Cambridge Avenue</td>
</tr>
<tr>
<td>1.Bellevue Hill</td>
<td>Rosslyn Street</td>
<td>8.Vaucluse</td>
<td>Greycliffe Avenue</td>
</tr>
<tr>
<td>1.Bellevue Hill</td>
<td>Victoria Road</td>
<td>8.Vaucluse</td>
<td>Hay Street</td>
</tr>
<tr>
<td>3.Double Bay</td>
<td>Carlotta Road</td>
<td>8.Vaucluse</td>
<td>Hopetoun Avenue</td>
</tr>
<tr>
<td>3.Double Bay</td>
<td>Epping Road</td>
<td>8.Vaucluse</td>
<td>Jesmond Avenue</td>
</tr>
<tr>
<td>3.Double Bay</td>
<td>Glendon Road</td>
<td>8.Vaucluse</td>
<td>Old South Head Road</td>
</tr>
<tr>
<td>3.Double Bay</td>
<td>Leura Road</td>
<td>8.Vaucluse</td>
<td>Serpentine Parade</td>
</tr>
<tr>
<td>4.Edgecliff</td>
<td>Edgecliff Road</td>
<td>8.Vaucluse</td>
<td>The Crescent</td>
</tr>
<tr>
<td>5.Paddington</td>
<td>Cambridge Street</td>
<td>10.Woollahra</td>
<td>Forth Street</td>
</tr>
<tr>
<td>5.Paddington</td>
<td>Duxford Street</td>
<td>10.Woollahra</td>
<td>John Street</td>
</tr>
<tr>
<td>5.Paddington</td>
<td>Gipps Street</td>
<td>10.Woollahra</td>
<td>Nelson Street</td>
</tr>
<tr>
<td>5.Paddington</td>
<td>Goodhope Street</td>
<td>10.Woollahra</td>
<td>Ocean Street</td>
</tr>
<tr>
<td>5.Paddington</td>
<td>Gurner Street</td>
<td>10.Woollahra</td>
<td>Trelawney Street</td>
</tr>
<tr>
<td>5.Paddington</td>
<td>Heeley Street</td>
<td>10.Woollahra</td>
<td>Wallis Street</td>
</tr>
<tr>
<td>5.Paddington</td>
<td>Hopetoun Street</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.Paddington</td>
<td>Lawson Street</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.Paddington</td>
<td>Liverpool Street</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.Paddington</td>
<td>Norfolk Street</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.Paddington</td>
<td>Ormond Street</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.Paddington</td>
<td>Queen Road</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5.3 Street Tree Supply and Installation Specifications

1. Technical Guidelines Overview
Planting trees within streets is a complex operation that can involve removal and reinstatement of existing pavements, excavation, disposal of spoil, supply and planting of the tree, mulching, and installation of final tree surrounds. When carried out on major roads, professional vehicle and pedestrian traffic control measures will be required including the potential scheduling of work in the early mornings or on weekends.

This considerable effort can be wasted if the tree dies shortly after planting and then must be replaced. It is therefore essential that the tree is in optimal condition when planted, and the methods of planting, protection and maintenance is of a high standard.

This part of the document outlines the required measures and requirements of Woollahra Council with regard to street tree planting. This Section will act as a specification for the purchase, installation and maintenance of street trees for use by the Council itself or any developers required to carry out work in the public domain.

Key factors that will be considered include:
- Purchase of trees of the specified size and quality
- Tree installation specification - including size of tree pit, and backfill provisions
- Street planting technical details
- Specification and installation of tree guards
- Maintenance requirements

2. Street Tree Supply Specification

2.1 General conditions and quality
All trees to be provided to the Council are to conform to the NATSPEC guide and "Guide for assessing the quality of and purchasing of landscape trees" by Ross Clark 2003. The following specification details the specific requirements for the supply and transportation of trees.

Nursery stock shall meet design criteria for minimum dimensions, container size and shape, plant shape or special pruning requirements outlined in this document and the table below.

<table>
<thead>
<tr>
<th>Container Volume</th>
<th>Height (m) above container</th>
<th>Calliper at 300mm</th>
<th>Clear trunk height (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>45 Litre</td>
<td>1.9 - 2.3</td>
<td>30-35 mm</td>
<td>1.2</td>
</tr>
<tr>
<td>75 Litre</td>
<td>2.2 - 2.4</td>
<td>40-45 mm</td>
<td>1.4</td>
</tr>
<tr>
<td>100 Litre</td>
<td>2.4</td>
<td>&gt; 50 mm</td>
<td>1.5</td>
</tr>
<tr>
<td>200 Litre</td>
<td>3.5</td>
<td>&gt; 60 mm</td>
<td>1.5</td>
</tr>
<tr>
<td>300 Litre</td>
<td>4.2</td>
<td>&gt; 70 mm</td>
<td>1.5</td>
</tr>
<tr>
<td>400 Litre</td>
<td>5.5</td>
<td>&gt; 70 mm</td>
<td>1.5</td>
</tr>
<tr>
<td>Palm trees</td>
<td>-</td>
<td>n/a</td>
<td>5.0</td>
</tr>
</tbody>
</table>

Definitions for the terms used within this specification shall be in accordance with the NATSPEC guide.

2.2 Labelling of stock
Clearly label individual trees and batches with the species name and cultivar / variety / provenance if appropriate. The label is to withstand transit without erasure or misplacement.

2.3 True to type
The trees supplied and planted shall be the species, and variety or cultivar that the Council has specified.

2.4 Health and vigour
The trees supplied shall be healthy and vigorous at the time of delivery and planting. Supply trees with foliage size, texture and colour at the time of delivery consistent with the size, texture and colour shown in healthy specimens of the nominated species. Supply trees with extension growth consistent with that exhibited by vigorous specimens of the nominated species.

2.5 Pest and disease
Trees shall not be diseased or show evidence of pest attack that could affect the long term health of the tree or adjoining plantings. Supply trees with foliage and soil free from attack by pests and diseases. For Australian native trees with a history of attack by native pests (eg. Ficus macrophylla & Eucalypts), evidence of previous attack must be restricted to less than 15% of the foliage and there must be no actively feeding insects or evidence of fungi.

2.6 Injury
Supply only trees free from injury and wounds.

2.7 Self supporting
Supply only trees that are self supporting.

2.8 Stem taper
Supply trees where the calliper at any given point on the stem is greater than the calliper at any point higher on the stem.

2.9 Pruning
Trees are not to be pruned into a saleable shape just prior to shipment. All pruning shall be a clean-cut at the branch collar, no lopping or topping of trees is to be carried out and the diameter of any wound must not exceed 50% of the calliper immediately above the point of pruning.

Clean stem height: trees shall be supplied with a clean stem height of 35-40% of total tree height. For example a 5m tree is to be pruned to 2m maximum (clean stem height must not exceed 40% of total tree height).

Pruning wounds: Restrict fresh cuts (i.e recent, non-calloused) to <20% of total tree height.

Type: Ensure a clean-cut at the branch collar that complies with AS4373-2007:Pruning of Amenity Trees.
2.10 Crown symmetry
The symmetry of the crown is an important aspect of the presentation and appearance of the tree in the landscape. Difference in crown distribution on opposite sides of the stem axis must not exceed 20%.

2.11 Stem structure
Species with an excurrent form: Supply trees with a defined central leader and the apical bud intact. Trees that have had their leaders cut or damaged will not be accepted. Supply trees with a single stem roughly in the centre of the tree with any deviation from vertical <15°.

Species with decurrent form: Supply trees where the central stem is not divided at any point lower than the clean stem height nominated, and that the stem junction at the point of division is sound.

All species: Ensure that branch diameter is less than or equal to one-half of the caliper immediately above the branch junction.

2.12 Included bark
Supply trees where the branch/stem bark ridges at junctions between stems and branches and between co-dominant stems are convex, except for species prone to include bark that are known to remain strong (as approved by Council).

2.13 Trunk position
Supply trees with the distance from the centre of the trunk to any extremity of the rootball is not varying by >10%.

2.14 Compatibility of graft unions
When purchasing named cultivars propagated by grafting, it is critical that the graft union is sound and that the scion and root stock are compatible. The union between the scion and the root stock must be sound for the entire perimeter of the graft. The diameter of the scion immediately above the graft must be equal to the diameter of the rootstock immediately below the graft (+or -20%).

2.15 Indication of north
Trees in containers >100 litres: Indicate the northerly aspect during growth in the nursery and ensure it is marked so to withstand transit without erasure or misplacement.

3. Street Tree Installation Specification

3.1 General
This specification describes the appropriate techniques to be used to install new street trees within the Council local government area.

There may be allowance for some variation in the techniques to be used, however any change to the techniques from those described here must be submitted in a Work Method Statement for approval by the Council prior to any work being carried out.

Tree planting works shall be undertaken by an Arborist or Horticulturist with minimum certification in accordance with Australian Qualifications Framework Level 2.

3.2 Typical scope of work
The scope of work for tree installation work typically comprises:-
(a) Demolition of existing tree pit or cutting of the existing footway.
(b) Excavation of subgrade for tree pits.
(c) Supply and installation of imported and existing soil mixes.
(d) Installation of trees.
(e) Supply and installation of wooden stakes, ties and guys where required to maintain stability.
(f) Installation of supplied tree guards where specified.
(g) Supply and installation of various style tree bases, to the Council’s specification, after an initial six (6) month soil settlement and tree establishment period.
(h) Reinstatement of pavement in any aborted tree pits.
(i) Maintenance of planted trees for a specified period following completion of planting.
3.3 Standards
All works shall be in accordance with the relevant standards. The following standards are referred to in this section:
- AS 4419-2003 Soils for landscaping and garden use;
- AS 4454-2003 Compost, soil conditioners and mulches;
- AS 4373-2007 Pruning of amenity trees.

3.4 Statutory requirements
The installer is responsible for compliance with all relevant statutory requirements.

The installer shall apply for a Road Opening Permit and be able to demonstrate clear working programs and sequences. Site specific pedestrian and vehicular traffic control plans are to be submitted as part of this application and shall conform to NSW Roads and Maritime Services guidelines and any other statutory requirements. These plans shall include any requirements for parking of work site vehicles and the delivery of materials.

Approval from the NSW Police Traffic Management Centre and NSW Roads and Maritime Services may be required when the work has an impact on traffic flow on major roads.

3.5 Environmental controls
The installer shall ensure that all materials and the execution of the work are ecologically sound, environmentally benign and consistent with the principles of sustainable development.

The installer shall take all practical precautions to ensure that dust and noise caused by the works are kept to a minimum. The installer shall take all practical precautions to prevent the spread of dirt and mud along roads and paths. The installer shall be responsible for all localised sediment and erosion control of work and stockpiles under their control and use.

The installer shall apply for a Road Opening Permit and be able to demonstrate clear working programs and sequences. Site specific pedestrian and vehicular traffic control plans are to be submitted as part of this application and shall conform to NSW Roads and Maritime Services guidelines and any other statutory requirements. These plans shall include any requirements for parking of work site vehicles and the delivery of materials.

3.6 Inspections
Provide not less than 48 hours notice so that a Council Representative can make the following inspections:
- (a) Tree stock prior to planting;
- (b) Plant materials set out and placed in tree pits before backfilling;
- (c) Tree planting completed;
- (d) Footpath reinstated;
- (e) Periodic inspections during maintenance period;
- (f) Completion of plant establishment period.

3.7 Site investigations, existing services and structures
The installer shall confirm with the Council the exact location of all tree pits associated with tree planting works.

In accordance with NSW electricity and gas supply regulations, all excavations for tree planting require the review of underground service plans sourced from Dial Before You Dig service. Specialist service location tools or expertise may be required when underground service plans are insufficiently detailed or where plans indicate that services are close to the intended planting location. The installer shall be responsible for the rectification of all pavement surfaces where inspections have been undertaken including the making good of any excavation or site markings.

The installer shall notify the Council immediately upon discovery of services or obstructions that prevent any planned tree planting. All services shall be considered live until determined otherwise. No liability is accepted, by the Council or the Service Authorities, for accidents resulting from contact or disturbance to services.

In the event of any damage to any service, the installer shall immediately notify the relevant authority and the Council and satisfy all requirements of the authority concerned.

The installer shall be liable for all damage caused by the tree installation works to all existing buildings and structures. The installer shall make good all damage at their expense.

3.8 Spoil
Surplus excavated material must be immediately removed from the site. This includes debris resulting from site clearance and excavated material not reusable as topsoil, filling, mulch or the like, unless otherwise specified or directed. Existing topsoil with any stump grinding debris incorporated within it will be removed from site and not re-used in the new planting site.

The installer shall be solely responsible for the safe and harmless disposal of material away from the site. Surplus excavated material shall not be permitted to remain in place overnight.

Existing tree base materials, such as unit pavers or stone tiles, can be recycled and reused in the new tree bases as long as specifications allow.

3.9 Extent of excavations
Excavate to an equivalent depth of the new tree rootball measured from the underside of any concrete base slabs, or as shown on the details. Do not disturb services, and excavate by hand around any existing services as required.

The installer shall measure the rootball depth of each tree to determine the appropriate tree pit depth. Allow additional depth to achieve specified falls for subsoil drainage lines and to satisfy finished levels.

Safety precautions must be in place to prevent public entry to work site area.

3.10 Existing pavement
The existing pavement shall be cut by a road-saw or other suitable tool to the dimensions shown in the details. Cutting shall only be at right angles and parallel to the kerb. The cut shall have a neat straight edge and smooth face. Kerbs must not be cut under any circumstances. In the case of cutting unit paving, ensure that the cuts are made along the joints without damage to the surrounding pavers. Unit paving may be dismantled rather
than cut if this option minimises damage.

3.11 Subgrade preparation
Cultivate or rip the subgrade at the base and sides of tree pits to a depth of 100mm. During cultivation, thoroughly mix in any materials required to be incorporated into the subsoil. Remove stones exceeding 70mm and any rubbish or other deleterious material brought to the surface during cultivation. Grade the base of tree holes to the required design levels and shapes after cultivation.

3.12 Root control barriers
Root barriers will typically not be required, and shall only be installed when specifically instructed by the Council.

3.13 Soil mixes
TYPE A Soil mix: Commercially available premium grade manufactured sandy loam organic garden mix conforming to AS4454.

TYPE B Soil mix: Blended soil mix comprising 50% recovered existing site topsoil (or imported premium grade top soil) and 50% Type A.

COURSE SAND: Shall be washed, sharp coarse river sand 0.25 to 2.0mm in diameter, free of weeds, debris or other deleterious material.

3.14 Soil stockpiling
Do not establish stockpiles of soil on the site. All materials are to be moved directly from carrier to the hole. The pavement surface is to be maintained in a clean and tidy state at all times.

3.15 Soil testing
Upon excavation, if the tree site appears to show poor subterranean condition (poor drainage or anaerobic conditions), the installer shall immediately notify the Council. Site specific soil testing or subsoil drainage may be specified and approved.

3.16 Drainage
Subsoil drainage is to be installed as per Council requirements and will be determined on a site by site basis.

3.17 Bad ground
Bad ground shall be ground considered unsuitable for the purpose of the works, including filling liable to subsidence, ground containing cavities, faults or fissures, ground contaminated by harmful substances or ground which is, or becomes soft, wet and unstable and the like.

If bad ground is encountered in, or adjacent, to any tree pit during the work, notify the Council immediately and obtain instructions before carrying out any further work in the affected area.

3.18 Planting conditions
Do not plant in unsuitable weather conditions such as extreme heat, cold wind or rain. Avoid planting where unseasonable and adverse weather is forecast within 24 hours of the operations. No trees are to be planted on days exceeding temperatures of 30º Celsius. Generally tree planting is preferred during the cooler months from March to October.

3.19 Watering
Thoroughly water the tree rootballs before planting and then immediately after planting. Prevent the rootballs from drying out during the transportation or planting phase.

Apply water so as not to disturb the soil. Raise the moisture within the root zone to field capacity. Ensure potted rootball is thoroughly wet through the entire soil profile. Continue watering at a rate and frequency as required to avoid water stress in the plant.

3.20 Lifting of trees
It is preferred that all trees are carried or slung via the root ball. In the event that the trees have to be repositioned or lifted by the trunk, the installer shall provide adequate soft padding to the trunk in the form of underfelt, carpet or rubber wrapping and use only soft slings during the lifting. Serious damage to the cambium tissue of the stem as a result of poor lifting techniques will require replacement of the tree.

3.21 Placement
When the tree pit is excavated and the hole is the correct size, place the rootball in its final position. Ensure the trees are centred and plumb and the top of the rootball level with the finished surface of the surrounding soil mix.

Do not use the trunk of the tree as a lever in positioning or moving the tree in the planting hole.

3.22 Alignment and orientation
Position the tree at the setout distances as indicated in the details. Ensure trunks are set vertically and aligned with other new or existing trees.

Orientate the trees trunk north where indicated by supplied markings where applicable. (+or- 20o). Adjust within the above tolerances so that the primary lowest branches are generally aligned parallel with the kerb and road way (NOT extending out into roadway).

3.23 Root trimming
All trees shall have the outer 10-25mm of the external root ball faces pruned or sliced away using secateurs or a suitably sharp and clean spade. Avoid excessive disturbance to the remaining rootball during this trimming and discontinue if excessive rootball soil begins to fall away. Do not leave the rootballs exposed for extended periods. Cover the rootball with moist hessian if backfilling can not occur immediately.

3.24 Backfilling
Backfill with soil mix as specified in soil mixes and in accordance with the details and specification. Lightly compact the soil to ensure all voids around rootballs are filled and that no air pockets are retained.

Ensure that the backfill soil is not paced over the top of the potted
rootball. The top of the rootball and plant stem must be kept level with the top of the backfill.

3.25 Mulch
Mulch shall be free of deleterious and extraneous matter, including soil, weeds, rocks, twigs and the like. Lay mulch to maximum 75mm depth. Place the mulch so that it is not in direct contact with the trunk. Feather mulch away from trunk at base of root ball.

Mulch the areas in accordance with the details. The mulch types to be used are as follows:-
- Decomposed granite brown colour, lightly compacted and installed as shown in the relevant standard details.
- Weed free timber chippings or recycled (no fines) wood waste.

4. Tree Establishment and Maintenance

4.1 Tree establishment period
The tree establishment period commences at the date of practical completion for a period specified by the Council.

All trees shall also be maintained immediately following their installation, as per the specifications below, up until the above tree establishment period commences. Tree maintenance works shall be undertaken by an Arborist or Horticulturist with minimum certification in accordance with Australian Qualifications Framework Level 2.

The installer shall submit a program prior to the commencement of the tree establishment period. The program shall detail all works required during the planting establishment period including:-
(a) Rectification of defects;
(b) Provision of materials;
(c) Watering;
(d) Fertilising;
(e) Control of weed growth;
(f) Replacement of dead, damaged or stolen plants.

The installer shall provide 7 days notice of any works to replace trees as part of planting establishment. Throughout the tree establishment period, the installer must continue to maintain new trees and carry out maintenance work including, but not limited to:-
- weeding and rubbish removal from tree surrounds;
- fertilising;
- pest and disease control;
- replanting (on approval from Council);
- adjustment, removal or replacement of stakes & ties;
- formative and selective pruning to AS 4373 and;
- mulching to maintain and reinstate to depth specified.

Watering - Allow for 10% of the planted container volume to be applied every 2 days for the first 2 weeks and then 20% of the container volume once per week for 3-4 months. Despite above guideline, installer to be monitor and maintain soil moisture during summer months ensuring the rootball does not dry out and causes wilting. Ensure the bottom of the tree planting hole does not become saturated. (The above is based on Spring to Early Autumn planting – the above frequency may be halved for winter plantings).

Inspection results and the maintenance procedures shall be recorded and submitted to the Council every 2 months. The various ongoing maintenance practices shall be carried out to the satisfaction of Council.

4.2 Tree guards and supports
The installer shall supply and install 3 wooden stakes with hessian ties per tree, for all trees planted up to 200 litre in size. Where advised by the Council, the installer shall allow to supply and install metal tree guards on specified trees.

4.3 Fertilising
The following table details the required fertiliser program.

<table>
<thead>
<tr>
<th>Timing</th>
<th>Product and application rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>At time of planting</td>
<td>Slow Release landscape fertiliser suitable for trees and shrubs, 9 to 12 months release time. Osmocote or approved equivalent applied according to manufacturers directions.</td>
</tr>
<tr>
<td>6 months after planting and then monthly through to end of plant the establishment period.</td>
<td>Organic liquid fertiliser. Seasol or approved equivalent applied to soil as per manufacturers directions.</td>
</tr>
</tbody>
</table>

4.4 Aeration pipe
Only where detailed, the aeration pipe will be 50mm slotted ‘Ag-Pipe’. These will be without a geotextile sleeve. Any surface grates will be separately specified by Council, where necessary.

4.5 Tree bases
Tree bases surrounded by permeable pavements or flagging etc. shall be left as soil or filled with a thin layer of decomposed granite for the first six (6) months to allow for any settlement of the rootball and backfill soil.

Following the six (6) month settlement period, the tree base as specified in the detail is to be installed.

The tree base is to be maintained in a safe and level condition at all times.

Failure of the tree bases prior to agreed practical completion timing will require rectification by the installer. This failure equates to any area of the tree base slumping/lifting/cracking or creating a trip hazard (variation of more then 10mm) and will require rectification by the installer.

4.6 Pavement rectification
Reinstate and make good to match exactly the surrounding pavement, to the satisfaction and approval of the Council, all pavement, paving, concrete, brick or other surfact damaged or affected by the tree planting and tree base installation works.
Existing materials salvaged from the site must be approved by the Council for reuse and must match existing pavement. Where temporary asphalt topping is required, approval of the Council shall be sought.

4.7 Tree replacements
Where trees are damaged or die or fail to maintain vigorous growth typical of the species due to neglect or inadequate maintenance, the installer shall replace, replant and maintain trees of the same species, size and quality.

5. Tree Planting Details
Technical details have been developed to ensure Council staff, developers and Council contractors provide an appropriate and consistent treatment for street tree planting throughout the variety of street environments typically encountered.

The Appendix 5.5 illustrate the typical details to be applied.

In-road planting details and median strip details will be dependent on the individual street widths, traffic and services and will therefore require site specific designs to be employed; however the following ‘ideal practice’ details have been included here to provide general expectations for tree planting in these instances.

The use of continuous planting trenches, structural soil, structural cells, suspended pavements and other tree planting technology will be considered based on specific site conditions. Actual designs shall be developed by Council or submitted to Council for consideration prior to any installation.
5.4 Street Tree Pruning Specifications

1. Overview
Pruning has a direct impact on the health, structure and viability of a tree. All pruning of live tissue results in a wound to the tree, which the tree has to attempt to seal and compartmentalise. Incorrect pruning techniques can lead to decay and disease within the tree, much the same as a wound in animals can lead to disease and infection.

Pruning of the canopy also has the consequence of removing valuable foliage, which in-turn removes an essential source of energy production from the tree. The tree will then also spend considerable reserves of energy in trying to regrow the losses of the removed foliage. Branches and trunks also hold important transport and storage tissues within the tree.

As per Woollahra Tree Management Policy 2011 Section 2.11 Council will generally not consider leaf, fruit, sap or bark drop or bird and bat droppings as valid reasons to prune or remove a street tree.

2. Canopy Pruning
Pruning of branches of street trees shall be as directed by the Council Tree Management Officer. Pruning is only to be undertaken by a qualified arborist (under the supervision of a person with AQF Level 4 or above). Work is to be in strict accordance with AS4373-2007 Pruning of Amenity Trees. Wounds are not to be treated.

Generally, evaluate the existing plant habit and form together with the desired habit, clearances and form as determined by Council and gain approval prior to any pruning. Minimise the size and number of wounds resulting from all pruning.

Use crown maintenance techniques on all protected trees to improve health and appearance. Use crown modification techniques on all protected trees to accommodate adjacent proposed structures and future construction access. Ensure remaining canopy is balanced with appropriate weight and crown distribution.

Use only clean, sharp pruning implements for all pruning work, ensuring that cuts are made without damage, tearing or bruising of vascular tissue.

Deadwooding
Remove all dead branches greater than 30mm in diameter as required on young trees less than 5m in height. Remove all dead branches of greater than 50mm diameter for existing mature trees greater than 5m in height.

Formative Pruning
Selectively remove branches as required to promote proper form and branching habit, typical for the natural growth habit of the species. For species with an excurrent branching habit, ensure the development of a dominant central leader. Remove lesser competing leaders where required. Ensure that no greater than 15-20% of the total foliage area is removed at any one time. Trees occurring below new or existing overhead power lines shall be pruned to create a lower and multi-branched canopy well below minimum clearances in line with Ausgrid guidelines.

Selective and Reduction Pruning
Remove identified branches for building clearance requirements. These should be removed to a suitable internal lateral branch at least 1/3 the diameter of the branch removed or to the branch collar at the stem. Also remove any broken, damaged and defective branches as required. Remove crossing and rubbing branches and branches with included bark at their junction to ensure proper form and branching habit as required.

Crown Lifting
Remove the lower branches as required to create adequate vehicular and pedestrian clearance up to a minimum height of 2.4m on the pedestrian side or over parking lanes and 4.5m on the trafficable roadside lanes (at 1 metre radius from the centre of the main trunk and outward). Ensure that at least 50% of the foliage arises from the lower two-thirds of the trunk.

Epiporic Growth and Suckers
Typically remove all epiporic growth occurring on the main trunks or basal suckers as and when they occur. If major pruning was undertaken it may be necessary to manage and allow some epiporic growth to mature to provide necessary foliage cover.

Palms
Only remove the old and spent fruits and fronds. Never remove the terminal shoot. To avoid transmission of diseases, tools shall be thoroughly disinfected between trees.

3. Root Pruning
Pruning roots of Council managed trees shall only be as directed by the Council. The Council shall use only a qualified arborist (AQF Level 4 or above) to undertake the pruning.

Prior to any excavation, check that there are no existing underground services along the proposed cut line that may be damaged. Roots are not, under any circumstances to be cut using normal excavation machinery of any sort. This usually results in splitting and massive disturbance well past the intended line of cut.

Preliminary root pruning using a high pressure water knife or air spade is allowable along an alignment of the final cut. Using a high pressure water jet, cut through the soil and tree roots from the surface down to the nominated depth or rock, whichever comes first and in the location(s) as shown on the drawing(s). All roots are to be hand excavated and pruned if necessary to provide clean cuts.

When required to cut roots, use sharp hand tools (e.g. secateurs, hand saw) such that the remaining root system is preserved intact and undamaged. Roots are to be cut back by hand square to the edge of the excavation. Do not cut any tree roots exceeding 100mm diameter unless permitted by Council and after evaluation by a AQF Level 5 arborist.
Excavations within root zones should be kept open for as short a period as possible. Any excavated face containing roots is to be supported immediately after cutting, where necessary, to prevent soil loss from around the retained roots.

4. Post Root Pruning Care
Cover the cut face of the roots with moist hessian or jute immediately after pruning. Maintain in moist state until permanent or temporary backfilling can be achieved.

If no temporary measures are required and finished levels can be achieved, backfill all excavations around tree roots with a mixture consisting of one part by volume of site soil and three parts of washed course sand with a neutral pH value, free from weed growth and harmful materials. Place the backfill in 150-200mm layers and thoroughly water the root zone surrounding the tree.

Apply root inducing hormone, Auxinone by Barmac Industries (or approved equivalent) at a rate of 1 part Auxinone to 50 parts water together with a soil wetting agent to the area around the cut root surfaces once per week for 10 weeks.
5.5 Typical Street Planting Details

Refer to the following pages for the standard typical street tree installation and planting details to be applied to all planting within the Woollahra area.
DETAIL 1 - TREE PLANTING IN GRASSED VERGE WITH NO PATH NEARBY
APPENDICES

DETAIL 2 - TREE PLANTING IN GRASSED VERGE STRIP WITH ADJOINING PATH

© Woollahra Street Tree Master Plan 2014
Full width concrete or asphalt footpath or as specified

Excavate planting to the same depth as the root ball of the containerised tree and to the maximum extent of the tree planting pit as designed and specified.

Tree placed centrally length ways in tree planting pit

Temporary tree guard using three 50x50x1800mm hardwood stakes at edge of planting pit. Arrange in triangular form to minimise conflict with opening car doors. Ensure stakes are driven outside of supplied container rootball.

Container rootball

Tree planting area mulch as specified by Council. (Chipped recycled wood waste, no fines, if nothing specified)

PLAN

Containerised street tree as specified

Grade mulch so that it is kept at least 50mm clear of the stem collar

Form small bermed dish close to the edge of potted rootball to facilitate establishment watering

Soil Type A - imported organic topsoil mix as specified to a maximum of 200mm depth

Existing excavated site topsoil loosely consolidated within planting hole

Ensure potted soil level and stem collar is set at kerb level

Scale 1:25 @ A3

DETAIL 3 - TREE PLANTING IN FULLY PAVED VERGE WITH DEEP SAND SUBSOILS

© Woollahra Street Tree Master Plan 2014
APPENDICES

DETAIL 4 - TREE PLANTING IN NARROW PAVED VERGE WITH EXPANDED SOIL VOLUME

© Woollahra Council 2014

© Woollahra Street Tree Master Plan 2014

5-15
DETAIL 5 - TREE PLANTING IN FULLY PAVED VERGE WITH EXPANDED SOIL VOLUME

© Woollahra Street Tree Master Plan 2014
APPENDICES

DETAIL 11 - INDICATIVE IN ROAD CENTRE ISLAND / MEDIAN PLANTING

© Woollahra Street Tree Master Plan 2014
5.6 Street Tree Data Sheets

The following pages are in alphabetical order (by botanical name) and provide illustrations and a brief description of the proposed street tree species for Woollahra.

The descriptions and measurements are a reasonable and indicative guide to the expected typical sizes in an average street environment with average soil conditions and moderate moisture levels.

Please note that some trees may gain larger sizes than suggested in the following data sheets but only in very favourable conditions or in their original and natural forest environments. They will seldom make it to those larger sizes in a normal street planting situation.
Botanic Name: 
*Acacia binervia* (syn. *Acacia glaucesens*)

Common Names:  
Coastal Myall

Family:  
FABACEAE (sub. fam. MIMOSOIDEAE)

Typical Height:  
8-12 metres

Typical Width:  
8 metres

Typical Growth rate:  
Fast.

Typical Habit:  
Dense broad domed and compact crown with dark coloured rough bark.

Foliage:  
Silvery grey curved phyllodes (modified leaf).

Flowers:  
Bright yellow rod shaped 'wattle' flowers in early spring.

Fruit:  
A legume (pea) pod that splits to reveal a hard row of seeds.

Site requirements:  
Free draining soil in a full sun position. Formative pruning required when young to achieve clearances.
Botanic Name:  
*Acmena smithii* (syn. *Syzygium smithii*)

Common Names:  
*Creek Lilly-Pilly*

Family:  
*MYRTACEAE*

Typical Height:  
10-15 metres

Typical Width:  
8 metres

Typical Growth rate:  
Moderate.

Typical Habit:  
Hardy and dense evergreen tree with a rounded to broadly columnar shape.

Foliage:  
Small glossy green leaves varying in shape from narrow-lanceolate to broad-ovate.

Flowers:  
Cream-white stamenous flowers in summer.

Fruit:  
Creamy-pink round berry-like fruit about 10-20mm in diameter, turning pinky red when ripe.

Site requirements:  
Tolerates a wide range of soils in a full sun or part shade position.
Botanic Name:  
*Angophora costata*

Common Names:  
*Sydney Red Gum/ Smooth Barked Apple*

Family:  
*MYRTACEAE*

Typical Height:  
12-20 metres

Typical Width:  
10 metres

Typical Growth rate:  
Fast.

Typical Habit:  
Tall native spreading tree with pink bark and twisted, gnarled branches.

Foliage:  
Light green, lanceolate and opposite leaves.

Flowers:  
White flowers occurring in large fluffy terminal clusters.

Fruit:  
Small ribbed woody capsules.

Site requirements:  
Prefers well drained to heavy soils in an open sunny position. Drought and frost resistant.
Botanic Name: Angophora floribunda

Common Names: Rough-barked Apple

Family: MYRTACEAE

Typical Height: 15-20 metres

Typical Width: 10 metres

Typical Growth rate: Moderate.

Typical Habit: Tall growing spreading tree with rough bark and twisted, gnarled branches.

Foliage: Light green, lanceolate and opposite.

Flowers: White flowers occurring in large fluffy terminal clusters late spring.

Fruit: Small ribbed woody capsules.

Site requirements: Prefers well drained to heavy soils in an open sunny position. Drought and frost resistant.
Botanic Name: 
*Angophora hispida*

Common Names: 
*Dwarf Apple*

Family: 
*MYRTACEAE*

Typical Height: 
5 - 7 metres

Typical Width: 
6 metres

Typical Growth rate: 
Moderate.

Typical Habit: 
Small growing spreading tree with rough bark and twisted, gnarled branches.

Foliage: 
Broad stiff, rough and light green, ovate opposite.

Flowers: 
White flowers occurring in large fluffy terminal clusters late spring.

Fruit: 
Small ribbed woody capsules.

Site requirements: 
Prefers well drained sandy soils in an open sunny position. Very drought and frost resistant.
Botanic Name: *Araucaria columnaris* (Syn *Araucaria cookii*)

Common Names: **Cook Pine**

Family: **ARAUCARIACEAE**

Typical Height: 20-25+ metres

Typical Width: 5-7 metres

Typical Growth rate: Moderate.

Typical Habit: Large very symmetrical columnar tree with a pole like trunk and regularly spaced radial branches, usually with a characteristic curved sweep at the trunk base. Classified as a conifer.

Foliage: Densely crowded spirally arranged leaves.

Flowers: None.

Fruit: Cones.

Site requirements: Free draining deep soil in a full sun position. Tolerates extreme coastal exposure.
Botanic Name:
*Araucaria heterophylla*

Common Names:
Norfolk Island Pine

Family:
ARaucariaceae

Typical Height:
20-25+ metres

Typical Width:
10 metres

Typical Growth rate:
Moderate.

Typical Habit:
Large very symmetrical tree with a pole like trunk and regularly spaced radial branches. Classified as a conifer.

Foliage:
Densely crowded spirally arranged leaves.

Flowers:
None.

Fruit:
Cones.

Site requirements:
Free draining deep soil in a full sun position. Tolerates extreme coastal exposure.
Botanic Name: 
*Arbutus unedo*

Common Names:  
Stawberry Tree

Family:  
ERICACEAE

Typical Height:  
5-8 metres

Typical Width:  
4-6 metres

Typical Growth rate:  
Slow - moderate.

Typical Habit:  
An attractive and hardy evergreen small tree with a rounded spreading crown.

Foliage:  
Attractive, slightly serrated foliage, mid to dark green in colour.

Flowers:  
Attractive but small pendulous bunches of creamy-white lantern shaped flowers.

Fruit:  
Round, marble-sized slightly warty berries turning from green to red when ripe.

Site requirements:  
Tolerates a wide range of soils in a full sun position.
Botanic Name: 
Archontophoenix cunninghamiana

Common Names: 
Bangalow Palm

Family: 
ARECACEAE

Typical Height: 
8-15 metres

Typical Width: 
3-4 metres

Typical Growth rate: 
Moderate.

Typical Habit: 
Slender single trunked palm with broadly pendulous light green fronds. Dead fronds typically shed leaving clean trunk.

Foliage: 
Light green pinnately divided 3-4m long fronds.

Flowers: 
0.8-1.2m long spikes with small white-pink flowers held under the lowest fronds, in Autumn

Fruit: 
Small red berry-like round fruits.

Site requirements: 
Adaptable to a variety of soil conditions in a full sun to fully shaded position. Tolerates some mild coastal exposure.
Botanic Name: 
Argyroderon actinophyllum  
(syn. Heritiera actinophylla)

Common Names:  
Black Booyong

Family:  
MALVACEAE

Typical Height:  
15-18 metres

Typical Width:  
10-12 metres

Typical Growth rate:  
Moderate.

Typical Habit:  
Tall and large evergreen tree with a dense and broadly domed crown, dark grey roughish barked trunk developing buttress roots at its base.

Foliage:  
5-9 light green palmately arranged leaflets on a long petiole.

Flowers:  
Panicles of small white flowers held at the end of the branches in Autumn

Fruit:  
Large winged samara fruits.

Site requirements:  
Adaptable to a variety of moist soil conditions in a full sun to part shaded position.
Botanic Name: 
*Backhousia citriodora*

Common Names: 
Lemon-Scented Myrtle

Family: 
MYRTACEAE

Typical Height: 
6-9 metres

Typical Width: 
3-5 metres

Typical Growth rate: 
Moderate.

Typical Habit: 
Small native tree with a compact form.

Foliage: 
Dense dull green leaves heavily scented with lemon. Oil is used for commercial purposes.

Flowers: 
Masses of creamy white lemon scented flowers in Summer.

Fruit: 
The fruit is a nut-like capsule which contains small seeds.

Site requirements: 
Well drained soil in a full sun position.
Botanic Name: *Banksia integrifolia*

Common Names: **Coast Banksia**

Family: PROTEACEAE

Typical Height: 7-10 metres

Typical Width: 5 metres

Typical Growth rate: Moderate.

Typical Habit: Small tree with rough corky bark and sometimes twisted and curvy trunks and stems.

Foliage: Leathery dull green leaves with a silvery underside.

Flowers: Pale yellow-green cylindrical flower spikes that are rich in nectar in summer through to winter.

Fruit: Woody fruit cones.

Site requirements: Well drained soil in a full sun position. Tolerates extreme drought and coastal exposure.
Botanic Name: *Banksia serrata*

Common Names: Old Man Banksia

Family: PROTEACEAE

Typical Height: 5-7 metres

Typical Width: 5 metres

Typical Growth rate: Moderate.

Typical Habit: Small tree with very rough corky bark and usually twisted and curvy trunks and stems.

Foliage: Leathery dull green leaves with a lighter underside and saw-tooth margins.

Flowers: Pale cream-white cylindrical flower spikes that are rich in nectar in summer through to winter.

Fruit: Woody fruit cones.

Site requirements: Well drained soil in a full sun position. Tolerates extreme drought and coastal exposure.
Botanic Name: *Brachychiton acerifolius*

Common Names: **Illawarra Flame Tree**

Family: **MALVACEAE**

Typical Height: 10-15 metres

Typical Width: 8 metres

Typical Growth rate: Moderate.

Typical Habit: Hardy medium sized sub-tropical native tree. It is generally deciduous before the flowers are seen in early summer. However, the deciduous nature of the plant is variable, in some seasons foliage will be retained on all or part of the tree.

Foliage: Large glossy light green leaves with a variable number of lobes, up to 7.

Flowers: The showy flowers are bell-shaped and bright coral red. They appear in spring on leafless branches.

Fruit: Dark seed pod contains numerous seeds embedded in hairs in a honeycomb-like husk.

Site requirements: Tolerates a wide range of soils but prefers rich moist soil in a full sun or part shade position.
Botanic Name:  
*Buckinghamia celsissima*

Common Names:  
Ivory Curl Flower

Family:  
PROTEACEAE

Typical Height:  
7-9 metres

Typical Width:  
5 metres

Typical Growth rate:  
Moderate.

Typical Habit:  
Small native tree from northern Queensland with a densely foliaged crown and compact rounded form.

Foliage:  
Large stiff and glossy elliptical leaves with wavy margins. New growth has pink/ bronze colouring.

Flowers:  
Large and profuse racemes of cream flowers up to 200mm long occurring at the ends of the branches in late spring to summer.

Fruit:  
The fruit is a nut-like capsule which are retained on old stems.

Site requirements:  
Tolerates most soils with good moisture and in a full sun position. Drought resistant once established.
Botanic Name: 
Butia capitata

Common Names: 
Wine Palm or Jelly Palm

Family: 
ARECACEAE

Typical Height: 
5-7 metres

Typical Width: 
4-5 metres

Typical Growth rate: 
Slow.

Typical Habit: 
Thick single trunked palm with broadly pendulous grey-green curving fronds. Dead fronds typically held and sheath the trunk unless removed.

Foliage: 
Grey-green pinnately divided 3-4m long fronds.

Flowers: 
Short spikes with small white-cream flowers held amongst the fronds, in Spring.

Fruit: 
Bunches of grape sized orange to brown fleshy rounded fruits.

Site requirements: 
Adaptable to a variety of soil conditions in a full sun position. Tolerates some coastal exposure.
Botanic Name:
Caesalpinia ferrea

Common Names:
Leopard Tree

Family:
FABACEAE
(sub. family CAESALPINIOIDEAE)

Typical Height:
8-15 metres

Typical Width:
8-10 metres

Typical Growth rate:
Slow to moderate.

Typical Habit:
An open and slender branched vase-shaped deciduous tree from Brazil with a smooth and attractively mottled bark.

Foliage:
Delicate light green, with fern-like bipinnate leaves.

Flowers:
Bright yellow in Spring.

Fruit:
Thick and waxy flattened dark brown pods.

Site requirements:
Adaptable to a variety of soil conditions in a full sun position. Prefers moist soils with some protection from winds and frosts when young.
Botanic Name:
*Callistemon viminalis*

Common Names:
*Bottlebrush*

Family:
*MYRTACEAE*

Typical Height:
7-10 metres

Typical Width:
5 metres

Typical Growth rate:
Moderate.

Typical Habit:
Small native tree with a weeping crown and compact form.

Foliage:
Light green narrow scented leaves. New growth has pink/ bronze colouring.

Flowers:
Bright red ‘bottlebrush’ flower in spring to summer.

Fruit:
The fruit are groups of nut-like capsules which are retained on old flowering stems.

Site requirements:
Tolerates moist soils in a full sun position. Drought resistant.
Botanic Name:  
*Casuarina glauca*

Common Names:  
Swamp She-Oak

Family:  
CASUARINAEAE

Typical Height:  
15-20 metres

Typical Width:  
5-8 metres

Typical Growth rate:  
Fast.

Typical Habit:  
Extremely hardy, medium to large upright native tree with a sparsely foliaged canopy with long and weeping needle-like branchlets and rough dark grey-brown bark.

Foliage:  
Dull dark green needle-like branchlets with tiny unseen clasping leaves. New growth has pink/ bronze colouring.

Flowers:  
Inconspicuous rusty-pink furry covering to some outer branchlets

Fruit:  
The fruit is a woody cone-like capsule which is retained on the younger woody stems.

Site requirements:  
Tolerates a vast variety of soils in a full sun position. Drought and waterlogging resistant.
Botanic Name:  
*Celtis australis*

Common Names:  
**Southern Hackberry**

Family:  
ULMACAEAE

Typical Height:  
10-15 metres

Typical Width:  
6-9 metres

Typical Growth rate:  
Moderate.

Typical Habit:  
Deciduous small to medium sized tree with smooth or slightly rough light grey bark. Generally they are a shapely and long lived low maintenance specimen tree.

Foliage:  
Broadly lance-shaped, serrated edge leaves that are dull and mid to dark green and rough to touch on the upper surface.

Flowers:  
Insignificant flowers.

Fruit:  
Small, hard purple black fruit which fall in autumn.

Site requirements:  
Well drained soil in full sun to part shade locations.
Botanic Name: *Cinnamomum camphora*

Common Names: *Camphor Laurel*

Family: LAURACEAE

Typical Height: 15-20 metres

Typical Width: 12-15 metres

Typical Growth rate: Fast.

Typical Habit: Evergreen medium to large spreading tree with fissured light grey bark, native to eastern Asia. Generally they are a shapely and long lived low maintenance specimen trees.

Foliage: Broadly elliptic, bright and light-mid green, glossy leaves that are wavy edged, with 3 distinctive veins spreading from the base.

Flowers: Insignificant small clusters of cream-green flowers in Spring.

Fruit: Small, fleshy purple-black berry-like fruit which fall in Autumn.

Site requirements: Well drained soil in full sun to part shade locations. Extremely tolerant of urban conditions and poor soils. Propensity to self seed and become weedy within bushland and derelict sites has lead to use only in historically important situations.
Botanic Name: 
*Corymbia citriodora*

Common Names: 
Lemon Scented Gum

Family: 
MYRTACEAE

Typical Height: 
18-25 metres

Typical Width: 
10-15 metres

Typical Growth rate: 
Fast.

Typical Habit: 
Large native open-crowned evergreen tree with an attractive smooth white trunk.

Foliage: 
Long narrow leaves with a strong lemon fragrance.

Flowers: 
Bears fluffy white flowers in summer to autumn.

Fruit: 
Urn shaped woody capsule.

Site requirements: 
Tolerates a wide range of soils in a full sun position. Very drought tolerant.
Botanic Name: *Corymbia eximia*

Common Names: **Yellow Bloodwood**

Family: MYRTACEAE

Typical Height: 10-18 metres

Typical Width: 8 metres

Typical Growth rate: Fast.

Typical Habit: An erect and typically well proportioned hardy native tree with a prominently yellowish-brown flaky bark.

Foliage: Glossy grey-green, curved lanceolate up to 18cm long.

Flowers: Creamy yellow flowers, appearing late spring to summer.

Fruit: Globose green capsules.

Site requirements: Prefers well drained Hawkesbury Sandstone or sandy soils in an open sunny position, but appears tolerant of a variety of soil types. Drought resistant but frost tender.
Botanic Name: 
*Corymbia gummifera*

Common Names: 
**Red Bloodwood**

Family:  
**MYRTACEAE**

Typical Height:  
15-20 metres

Typical Width:  
10 metres

Typical Growth rate:  
Fast.

Typical Habit:  
A tall but sometimes twisted and irregular branching native tree with fibrous brown to grey bark.

Foliage:  
Stiff green and curved discolourous leaves up to 10-15cm long.

Flowers:  
Creamy yellow flowers, appearing late spring to summer.

Fruit:  
Woody green urn-shaped capsules.

Site requirements:  
Prefers well drained Hawkesbury Sandstone soils in an open sunny position. Drought resistant but frost tender.
Botanic Name: *Corymbia maculata*

Common Names: Spotted Gum

Family: MYRTACEAE

Typical Height: 18-25 metres

Typical Width: 10 metres

Typical Growth rate: Fast.

Typical Habit: A tall growing native tree with smooth and straight trunk with attractively mottled, blue-grey, cream and sometimes pink or brown bark.

Foliage: Large glossy dark green, curved lanceolate up to 30cm long.

Flowers: White flowers occurring in winter to spring.

Fruit: Urn-shaped woody capsule.

Site requirements: Tolerates a wide range of soils in an open sunny position. Drought resistant, but frost tender before two years of age.
Botanic Name: 
*Cupaniopsis anacardiodies*

Common Names: 
Tuckeroo

Family: 
*SAPINDACEAE*

Typical Height: 
8-10 metres

Typical Width: 
5-8 metres

Typical Growth rate: 
Moderate.

Typical Habit: 
Medium sized native evergreen tree with a rounded and dense crown and neat form.

Foliage: 
Leathery and glossy leaves with bronze coloured new growth.

Flowers: 
Large clusters of small yellow flowers in spring to summer.

Fruit: 
Orange 3-part fruit capsules.

Site requirements: 
Tolerates a wide range of soils including poor modified sites. Full sun position. Salt and drought tolerant.
Botanic Name: 
_Elaeocarpus eumundi_

Common Names: 
**Eumundi Quondong**

Family: 
ELAEOCARPACEAE

Typical Height: 
10-12 metres

Typical Width: 
3-5 metres

Typical Growth rate: 
Moderate.

Typical Habit: 
Small native evergreen tree with a upright narrow form and dense glossy canopy.

Foliage: 
Dark green glossy leaves with deep bronze-red new growth.

Flowers: 
Bird attracting cream sweetly scented flowers in summer.

Fruit: 
Dark blue round berries.

Site requirements: 
Tolerates a wide range of soils but prefers rich moist soil in a full sun position.
Botanic Name:
Elaeocarpus reticulatus

Common Names:
Blueberry Ash

Family:
ELAEOCARPACEAE

Typical Height:
7-10 metres

Typical Width:
3-5 metres

Typical Growth rate:
Moderate.

Typical Habit:
Small native evergreen tree with a typically upright narrow and dense form but somewhat more random canopy shape with age.

Foliage:
Dark green matt leaves with finely toothed edges.

Flowers:
Showy light pink to creamy white flowers in spring to summer.

Fruit:
Bright blue berries that give the tree its name.

Site requirements:
Tolerates a wide range of soils but prefers rich moist soil in a full sun position. Drought tolerant.
Botanic Name: 
*Eucalyptus botryoides*

Common Names: 
**Bangalay**

Family: 
**MYRTACEAE**

Typical Height: 
15-20 metres

Typical Width: 
10 metres

Typical Growth rate: 
Fast.

Typical Habit: 
Large native evergreen tree with an open spreading crown and soft corky-fibrous reddish brown bark. Very similar to, and often confused with, *Eucalyptus botryoides*.

Foliage: 
Broad and stiff lanceolate leaves.

Flowers: 
Showy clusters of creamy white flowers in winter to early summer.

Fruit: 
Large urn-shaped capsule.

Site requirements: 
Tolerates a wide range of soils in a full sun position. Very drought tolerant.
Botanic Name: 
*Eucalyptus haemastoma*

Common Names: 
Scribbly Gum

Family: 
MYRTACEAE

Typical Height: 
10-15 metres

Typical Width: 
10 metres

Typical Growth rate: 
Fast.

Typical Habit: 
Medium native evergreen tree with an open spreading crown and smooth white bark, usually with distinctive insect 'scribbles'.

Foliage: 
Broad and stiff lanceolate leaves.

Flowers: 
Showy clusters of creamy white flowers in winter to early summer.

Fruit: 
Small urn-shaped capsule.

Site requirements: 
Prefers shallow sandy soils but will tolerate a wide range of soils in a full sun position. Very drought tolerant.
Botanic Name: 
*Eucalyptus paniculata*

Common Names: 
**Grey Ironbark**

Family: 
**MYRTACEAE**

Typical Height: 
20-25+ metres

Typical Width: 
10-15 metres

Typical Growth rate: 
Fast.

Typical Habit: 
Large and typically upright native evergreen tree with an open spreading crown and hard and deeply fissured dark grey-brown bark.

Foliage: 
Narrow and broadly pendulous lanceolate leaves.

Flowers: 
Showy clusters of creamy white flowers in winter to early summer at end of branchlets.

Fruit: 
Urn-shaped capsule.

Site requirements: 
Tolerates a wide range of soils in a full sun position. Very drought tolerant.
Botanic Name:  
*Eucalyptus pilularis*

Common Names:  
Blackbutt

Family:  
MYRTACEAE

Typical Height:  
20-25+ metres

Typical Width:  
15-20 metres

Typical Growth rate:  
Fast.

Typical Habit:  
Large native evergreen tree with an open spreading crown with a straight trunk and a sock of dark grey fibrous bark on the lower portions. The Upper trunk and branches have smooth white-grey bark, often shed in ribbons.

Foliage:  
Narrow lanceolate leaves.

Flowers:  
Creamy white flowers in winter to early summer.

Fruit:  
Small urn-shaped capsules.

Site requirements:  
Tolerates a wide range of soils in a full sun position. Very drought tolerant.
Botanic Name:
*Eucalyptus piperita*

Common Names:
*Sydney Peppermint*

Family:
*MYRTACEAE*

Typical Height:
15-20+ metres

Typical Width:
10-15 metres

Typical Growth rate:
Fast.

Typical Habit:
Medium to large native evergreen tree with a somewhat variable open spreading crown with a sock of light grey finely fibrous bark to lower trunk. Upper trunk and branches with smooth white-grey bark, often shed in long ribbons.

Foliage:
Narrow lanceolate leaves with a strong peppermint smell when crushed.

Flowers:
Creamy white flowers in winter to early summer.

Fruit:
Small urn-shaped capsule.

Site requirements:
Tolerates a wide range of soils in a full sun position. Very drought tolerant.
Botanic Name:  
*Eucalyptus robusta*

Common Names:  
Swamp Mahogany

Family:  
MYRTACEAE

Typical Height:  
12-18 metres

Typical Width:  
8-12 metres

Typical Growth rate:  
Fast.

Typical Habit:  
Medium native evergreen tree with a dense canopy and deeply furrowed reddish brown persistent bark. Very similar to, and often confused with, Eucalyptus botryoides.

Foliage:  
Large dark green leaves with a pale under side.

Flowers:  
Bears white nectar rich flowers in spring to autumn.

Fruit:  
Urn shaped capsule.

Site requirements:  
Tolerates water logged or heavily compacted soils in a full sun position. Drought tolerant.
Botanic Name:  
*Eucalyptus sideroxylon*

Common Names:  
Red Iron Bark/ Mugga Mugga

Family:  
MYRTACEAE

Typical Height:  
18-25 metres

Typical Width:  
8-12 metres

Typical Growth rate:  
Fast.

Typical Habit:  
Medium to large native evergreen tree with very dark (nearly black) deeply furrowed bark. Habit can be variable.

Foliage:  
Drooping, narrow greyish green to blue leaves.

Flowers:  
Showy flowers are usually white, however pink and red flowering forms are also fairly common.

Fruit:  
Urn-shaped capsule.

Site requirements:  
Tolerates a wide range of heavier soils in a full sun position. Extremely drought tolerant.
Botanic Name:  
*Eucalyptus tereticornis*

Common Names:  
Forest Red Gum

Family:  
MYRTACEAE

Typical Height:  
18-25 metres

Typical Width:  
10-15 metres

Typical Growth rate:  
Fast.

Typical Habit:  
Large native evergreen tree with smooth grey-white trunk with bark that sheds in short ribbons.

Foliage:  
Broad tapering grey-green leaves.

Flowers:  
Creamy white flowers in summer.

Fruit:  
Small urn-shaped capsule.

Site requirements:  
Tolerates a wide range of soils but prefers heavier clay soils in a full sun position. Frost and drought tolerant.
Botanic Name:  
*Ficus microcarpa var. 'hillii'*

Common Names:  
**Hills Weeping Fig**

Family:  
**MORACEAE**

Typical Height:  
20-25 metres

Typical Width:  
15-20 metres

Typical Growth rate:  
Fast.

Typical Habit:  
A large, hardy native evergreen tree with a dense spreading crown and a large and stout trunk and lower branches with light grey bark.

Foliage:  
Medium (8cm), glossy leathery bright green leaves with an elliptical shape, slightly pendulous towards the ends of the branches.

Flowers:  
Insignificant.

Fruit:  
Profuse rosy red or pink, small (1.2cm) round figs appearing in summer.

Site requirements:  
Botanic Name: *Ficus rubiginosa*

Common Names: **Port Jackson Fig**

Family: MORACEAE

Typical Height: 15-20 metres

Typical Width: 15-20 metres

Typical Growth rate: Moderate.

Typical Habit: An erect, sturdy native tree with a heavy dense crown. The main trunk is buttressed and sometimes aerial roots are produced.

Foliage: Dark green, smooth and ovate to elliptical shaped leaves up to 10cm long. Often rusty short hairs on the underside of leaf or sometimes smooth and without rusty colour when sourced from tropical northerly populations.

Flowers: Insignificant.

Fruit: Pairs of yellow globular figs. Mature in autumn

Site requirements: Light to medium soils in an open, sunny position. Drought, frost and salt tolerant.
Botanic Name:
*Flindersia australis*

Common Names:
Crows Ash / Australian Teak

Family:
RUTACEAE

Typical Height:
15-20 metres

Typical Width:
8-10 metres

Typical Growth rate:
Moderate.

Typical Habit:
A tall, sturdy semi-deciduous native rainforest tree with scaly brown bark and densely branching crown. Form can be somewhat variable from very columnar to more spreading.

Foliage:
Large dark green, compound, leaves with 7 to 15 lanceolate slightly serrated margin leaflets.

Flowers:
Small, white with brown centres occurring in dense heads.

Fruit:
Large prickly pods, splitting into 5 boat-like sections.

Site requirements:
Sandy to medium soils in an open, sunny position. Drought and frost tender.
Botanic Name: *Fraxinus griffithii*

Common Names: **Evergreen Ash**

Family: **ULMACÆAE**

Typical Height: 6-9 metres

Typical Width: 5-7 metres

Typical Growth rate: **Moderate.**

**Typical Habit:**
A small to medium sized sturdy evergreen tree with a compact rounded shape.

**Foliage:**
Leaves are pale green above and silvery beneath.

**Flowers:**
White flowers appear in spring in long panicles at the branch tips.

**Fruit:**
Masses of single seeded winged samaras turning sandy-brown.

**Site requirements:**
Tolerates a wide range of soils in a full sun or part shade position.
Botanic Name: Glochidion ferdinandi

Common Names: Cheese Tree

Family: EUPHORBIACEAE

Typical Height: 8-12 metres

Typical Width: 8 metres

Typical Growth rate: Medium

Typical Habit: Medium sized native evergreen tree with a spreading form and dense canopy. Formative pruning may be required to achieve clearances.

Foliage: Dark green glossy leaves.

Flowers: Insignificant white flowers in spring.

Fruit: Small round white fruit in summer that ripen to reddish brown resembling a miniature cheese wheel, but they are not edible.

Site requirements: Full sun to partial shade. Adaptable to most soils but prefer richer moist soil.
Botanic Name:  
*Gordonia axillaris*

Common Names:  
Gordonia/ Fried Egg Plant

Family:  
THEACEAE

Typical Height:  
5-8 metres

Typical Width:  
5 metres

Typical Growth rate:  
Slow.

Typical Habit:  
Small tree with a broad rounded canopy and smooth mottled grey-brown bark. Formative pruning may be required to achieve suitable clearances.

Foliage:  
Large elongated dark green smooth glossy leaves.

Flowers:  
The flowers have soft creamy white petals with central bright yellow-orange stamens, which give the appearance of a ‘fried egg’.

Fruit:  
The fruit is a dry five-valved capsule, with 1-4 seeds in each section.

Site requirements:  
Prefers rich moist soils in a full sun or part shade position.
Botanic Name: *Harpullia pendula*

Common Names: **Tulipwood**

Family: **SAPINDACEAE**

Typical Height: 8-12 metres

Typical Width: 8 metres

Typical Growth rate: Moderate.

Typical Habit: Large native evergreen tree with a dense canopy and light grey to almost white bark.

Foliage: Dark green glossy leaves.

Flowers: Greenish-yellow to white flower in summer.

Fruit: Attractive 2-lobed capsules are yellow-orange to red at maturity and split open to reveal dark glossy black seeds.

Site requirements: Light to medium soil types in an open sunny position. Prefers moist conditions.
Botanic Name: 
*Hibiscus tiliaceous*

Common Names: 
*Coast Cottonwood*

Family: 
MALVACEAE

Typical Height: 
8-10 metres

Typical Width: 
6-8 metres

Typical Growth rate: 
Moderate.

Typical Habit: 
Medium evergreen tree with smooth grey bark and dense low branching canopy.

Foliage:
Rounded, smooth leathery leaves with small hairs underneath.

Flowers:
Solitary large yellow or white 'hibiscus' flowers with prominent red-brown stamens.

Fruit:
Fruit is a brown capsule with hairs inside.

Site requirements:
Light soil types in an open sunny position. Salt tolerant and drought resistant. Needs formative pruning to provide clearances.
Botanic Name: \textit{Howea forsteriana}

Common Names: \textbf{Kentia Palm}

Family: ARECACEAE

Typical Height: 8-12 metres

Typical Width: 4-6 metres

Typical Growth rate: Slow to Moderate.

Typical Habit: A hardy, slender single trunked palm with broadly pendulous light green fronds, native to Lord Howe Island. Dead fronds typically shed leaving clean and smooth green to brown trunk.

Foliage: Light green pinnately divided 3-4m long fronds.

Flowers: Largely inconspicuous short unbranched spikes with small cream-brown flowers held amongst the fronds.

Fruit: Grape-sized brown-red nut-like fruits that take 3-4 years to fully ripen.

Site requirements: Adaptable to a variety of soil conditions in a full sun to fully shaded position. Tolerates some limited coastal exposure.
Botanic Name:
Jacaranda mimosifolia

Common Names:
Jacaranda

Family:
BIGNONIACEAE

Typical Height:
10-15 metres

Typical Width:
8-10 metres

Typical Growth rate:
Fast.

Typical Habit:
A medium sized attractive deciduous tree with an upright but spreading shape.

Foliage:
Fern-like bipinnate mid green foliage, turning yellow in autumn.

Flowers:
Prolific terminal clusters of bell shaped mauve-blue flowers on leafless stems.

Fruit:
Flattened disc-like seed pods.

Site requirements:
Tolerates a wide range of soils in a full sun or part shade position.
Botanic Name:
*Koelreuteria bipinnata*

Common Names:
Chinese Rain tree

Family:
SAPINDACEAE

Typical Height:
10-15 metres

Typical Width:
8-10 metres

Typical Growth rate:
Slow.

Typical Habit:
An attractive medium-sized deciduous and wide spreading tree. It has a domed crown and furrowed bark.

Foliage:
Mid green leaflets turn deep golden yellow to orange in autumn. Bipinnate foliage about 60cm long.

Flowers:
Large cluster of yellow flowers with very large terminal panicles up to 30cm long appear in summer.

Fruit:
Fruit capsule appears as papery bladder-like pinkish brown pods.

Site requirements:
Well drained soil in full to part shade locations. Frost and drought resistant.
Botanic Name: 
*Lagerstroemia indica cv.*

Common Names: 
**Crepe Myrtle**

Family: 
**LYTHRACEAE**

Typical Height: 
7-10 metres

Typical Width: 
4-7 metres

Typical Growth rate: 
Moderate.

Typical Habit: 
A small deciduous tree with an open spreading rounded head. It has smooth beige coloured bark streaked red brown. Formative pruning may be required to achieve clearances.

Foliage: 
Small oval leaves.

Flowers: 
Papery frilly pale mauve, pink or white flowered cultivars. Flower heads appear at the tip of the current season's growth.

Fruit: 
Rounded pea-sized woody capsules.

Site requirements: 
Well drained soil in full sun locations. Forms a shapely vase-shaped tree without any pruning but also very tolerant of repeated and hard pruning if required.
Botanic Name:  
*Livistona australis*

Common Names:  
*Cabbage Tree Palm*

Family:  
ARECACEAE

Typical Height:  
15-20 metres

Typical Growth rate:  
Slow.

Typical Habit:  
Tall palm tree, with a single study fibrous to smooth grey trunk and a compact head of fan shaped leaves. It has a slender trunk that shows scars left by the shed fronds.

Foliage:  
Large semi- circular shiny dark green fronds with drooping tips are located at the apex of the trunk. Often the lower leaves in the crown persist for a short period even though they are dead or have turned brown. The frond stalks are long and have spikes.

Flowers:  
Long sprays of yellow cream flowers are borne in spring.

Fruit:  
Dull purple-black grape-sized globular fruit.

Site requirements:  
Prefers moist but reasonably well drained, neutral acid soils. Will tolerant very shaded positions and coastal exposure.
Botanic Name: 
*Lophostemon confertus*

Common Names: 
**Brush Box**

Family: 
**MYRTACEAE**

Typical Height: 
15-20 metres

Typical Width: 
8-12 metres

Typical Growth rate: 
Fast.

Typical Habit: 
A tall, sturdy evergreen native tree with rough bark at the base and smooth pinkish bark above peeling in summer to reveal greenish cream new bark. A densely spreading crown with domed head.

Foliage: 
Deep green, ovate to acuminate and 15cm long.

Flowers: 
White, dainty, 5 petalled and fragrant flowers with long fluffy stamens appearing in spring.

Fruit: 
Small woody capsules.

Site requirements: 
Sandy to medium soils in an open, sunny position. Drought and frost tolerant.
Botanic Name:

*Magnolia grandiflora 'Exmouth'*

Common Names:

Southern Magnolia/ Bull Bay Magnolia

Family:

MAGNOLIACEAE

Typical Height:

12-15 metres

Typical Width:

5 metres

Typical Growth rate:

Slow.

Typical Habit:

Medium evergreen tree with spreading conical crown.

Foliage:

Glossy green, ovate to oblong, leathery with undulating margins and burgundy brown underside.

Flowers:

Large cup shaped flowers, pale yellow or cream, 25cm across and fragrant, appearing in summer.

Fruit:

Cucumber-like woody pods with bright red seeds.

Site requirements:

Neutral to acid soils in an open, sunny position. Frost resistant but drought tender.
Botanic Name:
*Melaleuca bracteata*

Common Names:
Black Tea-Tree

Family:
MYRTACEAE

Typical Height:
8-10 metres

Typical Width:
5-6 metres

Typical Growth rate:
Fast.

Typical Habit:
A small to medium, erect evergreen tree with white to cream papery/ spongy dark coloured bark, spreading pendant branches on older trees and a finely foliaged crown.

Foliage:
Small and thin lanceolate leaves, 1-2cm long.

Flowers:
Small white-cream, bottle brush-like flowers appearing throughout spring and summer.

Fruit:
Small woody capsules on a spike.

Site requirements:
Prefers moist soils in an open, sunny position, but tolerates a very wide range of soils and conditions. Drought tolerant.
Botanic Name: *Melaleuca quinquenervia*

Common Names: **Broad leafed Paperbark**

Family: **MYRTACEAE**

Typical Height: 15-18 metres

Typical Width: 5-7 metres

Typical Growth rate: **Fast.**

Typical Habit: A tall, erect evergreen tree with white to cream papery/spongy bark, spreading twisted pendant branches and a densely textured crown.

Foliage: Thick lanceolate, sickle-shaped leaves, 10cm long, and prominently veined.

Flowers: Small cream, bottle brush-like appearing in spring and summer.

Fruit: Small woody capsules on a spike.

Site requirements: Prefers moist soils in an open, sunny position, but tolerates a very wide range of soil conditions. Drought tolerant.
Botanic Name:  
*Murraya paniculata*

Common Names:  
*Orange Jessamine / Mock Orange*

Family:  
*RUTACEAE*

Typical Height:  
4-6 metres

Typical Width:  
3-4 metres

Typical Growth rate:  
Fast.

Typical Habit:  
Small tree or large shrub with a broad rounded canopy and smooth mottled grey-brown bark. Formative pruning may be required to achieve suitable tree shape and clearances.

Foliage:  
Bright green, smooth and glossy leaves.

Flowers:  
The small but fragrant flowers have soft creamy-white petals variously throughout the year.

Fruit:  
The inconspicuous small elliptical hairy seeds.

Site requirements:  
Prefers rich moist soils in a full sun or part shade position, but adaptable to a very wide range of conditions.
Botanic Name:
*Phoenix canariensis*

Common Names:
*Canary Island Date Palm*

Family:
*ARECACEAE*

Typical Height:
10-15 metres

Typical Width:
6-8 metres

Typical Growth rate:
Slow.

Typical Habit:
Thick trunked palm tree with long fronds that forms a dense rounded crown.

Foliage:
Long fronds that have stiff leaves and sharp spines at the base.

Flowers:
Small yellow flowers grow in clusters amongst the fronds.

Fruit:
Large grape-sized dates up to 8cm long which are cylindrical and orange when ripe.

Site requirements:
Full sun, however will tolerate some shade, and very tolerant of exposure and salt laden winds and poor soils. Now at risk from the spread of Fusarium Wilt which can kill infected trees.
Botanic Name: *Platanus x acerifolia 'Bloodgood'*
(syn Platanus x hybrida)

Common Names: **London Plane Tree**

Family: **PLATANACEAE**

Typical Height: 18-25 metres

Typical Width: 10-15 metres

Typical Growth rate: Fast.

Typical Habit: A large vigorous and wide crowned deciduous tree with a stout trunk and broadly ascending branches. It has an attractive flaking, mottled bark which is shed in winter.

Foliage: Large maple like foliage divided into 3, 5 or 7 lobes. The leaves turn yellow to brown in Autumn. Species is currently susceptible to Sycamore Lace Bug and other pests which can cause premature leaf fall.

Flowers: Insignificant.

Fruit: Comprises bristly brown seed balls about 3cm across which are carried in groups of 2 - 3 on a short stalk. These are typically held on to the tree after the foliage has fallen in Autumn.

Site requirements: Very tolerant of a wide range of soil conditions and pollution.
Botanic Name: 
*Podocarpus elatus*

Common Names: 
Plum Pine

Family: 
PODOCARPACEAE

Typical Height: 
10-15 metres

Typical Width: 
10-15 metres

Typical Growth rate: 
Moderate.

Typical Habit: 
Broad and densely canopied tree. Classified as a conifer.

Foliage: 
Densely crowded dark green elongated leaves.

Flowers: 
Although not a flower, male trees do have light brown, catkin-like cone structures arranged in clusters.

Fruit: 
Is composed of two segments, a hard, dark inedible seed about 1cm in diameter, and a larger, fleshy, purple-black, seedless, grape-like fruit that is actually a "modified stalk" about 2.5cm in diameter.

Site requirements: 
Free draining deep soil in a full sun position. Tolerates coastal exposure.
Botanic Name:  
*Pyrus calleryana* ‘Chanticleer’

Common Names:  
Glens Form Pear/ Callery Pear

Family:  
ROSACEA

Typical Height:  
6-8 metres

Typical Width:  
3-4 metres

Typical Growth rate:  
Moderate.

Typical Habit:  
A small sized upright deciduous tree. It has attractive foliage and a dense habit.

Foliage:  
Lustrous dark green leaves to 8cm long that turn gold to plum in autumn.

Flowers:  
Masses of white flowers to 20mm wide produced in spring.

Fruit:  
Small, dull gold to russet coloured fruit.

Site requirements:  
Frost tolerant, drought tender.
Botanic Name: *Pyrus ussuriensis*

Common Names: **Manchurian Pear**

Family: **ROSACEA**

Typical Height: 8-12 metres

Typical Width: 8-10 metres

Typical Growth rate: Moderate.

Typical Habit: A medium sized spreading deciduous tree. It has attractive foliage and a dense habit.

Foliage: Lustrous dark green leaves to 8cm long that turn gold to plum in autumn.

Flowers: Masses of white flowers to 20mm wide produced in spring.

Fruit: Small, dull gold to russet coloured fruit.

Site requirements: Frost tolerant, but can be drought tender.
Botanic Name:  
*Sapium sebiferum*  
(syn. *Triadica sebiferum*)

Common Names:  
Chinese Tallow Tree

Family:  
**EUPHORBIACEAE**

Typical Height:  
10-12 metres

Typical Width:  
6-8 metres

Typical Growth rate:  
Fast.

Typical Habit:  
An attractive medium sized deciduous tree with a domed spreading crown.

Foliage:  
Soft bright green leaves are heart shaped with a pointed tip. Turns to a deep orange-red in autumn. Can be susceptible to white waxy scale.

Flowers:  
Spikes of greenish to yellow flowers in late spring.

Fruit:  
White round pea sizes seed pods.

Site requirements:  
Tolerates a wide range of soils in a full sun or part shade position.
Botanic Name:  
**Stenocarpus sinuatus**

Common Names:  
**Firewheel Tree**

Family:  
**PROTEACEAE**

Typical Height:  
8-12 metres

Typical Width:  
6 metres

Typical Growth rate:  
Moderate.

Typical Habit:  
Medium evergreen rainforest tree with smooth grey to brown bark.

Foliage:  
Long shiny leathery dark green leaves with a dull green underside.

Flowers:  
Deep orange to red flowers in an umbel or wheel like arrangement that gives the tree its name. Summer through to autumn.

Fruit:  
The fruit is a long seed pod that contains flat papery seeds.

Site requirements:  
Despite its sub-tropical to tropical origin it is adaptable to a range of climates and will even succeed in dry areas. Sunny or partly shaded location. Salt tolerant and drought resistant.
Botanic Name: 
*Syncarpia glomulifera*

Common Names: 
*Turpentine*

Family: 
*MYRTACEAE*

Typical Height: 
12-18 metres

Typical Width: 
8-10 metres

Typical Growth rate: 
Moderate.

Typical Habit: 
Large dense native tree with broadly columnar form with horizontal branching structure.

Foliage: 
Stiff and dark dull green leaves with a grey furry underside.

Flowers: 
Profuse fluffy white flower clusters in summer.

Fruit: 
Hard, marble-sized globular wood capsule.

Site requirements: 
Tolerates a wide range of soils but prefers heavier clay based soils in a full sun or part shade position.
Botanic Name: Synoum glandulosum

Common Names: Scentless Rosewood

Family: MELIACEAE

Typical Height: 6-8 metres

Typical Width: 4-5 metres

Typical Growth rate: Moderate.

Typical Habit: Small bushy rainforest margin native tree. May require formative pruning to achieve clearances and promote a single leader and tree form.

Foliage: Small glossy mid-green leaves.

Flowers: Inconspicuous white flowers in late summer.

Fruit: Reddish three-lobed capsule.

Site requirements: Tolerates a wide range of soils but prefers rich moist soil in a full sun or part shade position.
Botanic Name:
*Syzgium ingens* (syn. *Acmena barchyandra*)

Common Names:
Red Apple

Family:
MYRTACEAE

Typical Height:
10-15 metres

Typical Width:
8-12 metres

Typical Growth rate:
Moderate.

Typical Habit:
Medium to large spreading rainforest native tree.

Foliage:
Glossy dark green leaves with a prominent pointed tip. Flushes of new growth in pale pink to red.

Flowers:
Bird attracting small fluffy white flowers in summer.

Fruit:
Small pink round fleshy fruit.

Site requirements:
Tolerates a wide range of soils but prefers rich moist soil in a full sun or part shade position.
Botanic Name: 
*Syzygium leuhmannii*

Common Names: 
Riberry

Family: 
MYRTACEAE

Typical Height: 
8-10 metres

Typical Width: 
5-6 metres

Typical Growth rate: 
Moderate.

Typical Habit: 
Small bushy rainforest native tree. May require formative pruning to achieve clearances and promote a single leader and tree form.

Foliage: 
Small glossy dark green leaves with a prominent pointed tip. Flushes of new growth in pale pink to red.

Flowers: 
Bird attracting small fluffy white flowers in summer.

Fruit: 
Small pink pear shaped fleshy fruit.

Site requirements: 
Tolerates a wide range of soils but prefers rich moist soil in a full sun or part shade position.
Botanic Name:
*Syzygium paniculatum*

Common Names:
**Brush Cherry**

Family:
**MYRTACEAE**

Typical Height:
9-15 metres

Typical Width:
6-9 metres

Typical Growth rate:
**Fast.**

Typical Habit:
Small to medium bushy rainforest native tree. May require some formative pruning to achieve clearances and promote a single leader and tree form.

Foliage:
Glossy dark green leaves with coppery new growth.

Flowers:
Bird attracting small fluffy white flowers in summer.

Fruit:
Small pink pear shaped fleshy fruit.

Site requirements:
Tolerates a wide range of soils in a full sun or part shade position.
Botanic Name:
*Tipuana tipu*

Common Names:
Pride of Bolivia

Family:
FABACEAE (subfamily FABIODEAE)

Typical Height:
12-15 metres

Typical Width:
10-12 metres

Typical Growth rate:
Fast.

Typical Habit:
A medium domed spreading deciduous tree with a broadly pendulous habit and grey-brown fissured bark.

Foliage:
Large bipinnate leaves, with numerous bright mid-green leaflets

Flowers:
Clusters of prominent bright yellow flowers occur in leaf-less racemes in Spring.

Fruit:
Large brown winged samara seeds that mature in autumn.

Site requirements:
This is a very hardy tree that tolerates wind, pollution and a wide range of soil conditions.
Botanic Name:
*Tristaniopsis laurina*

Common Names:
**Water Gum**

Family:
**MYRTACEAE**

Typical Height:
7-10 metres

Typical Width:
5-6 metres

Typical Growth rate:
Moderate to fast.

Typical Habit:
Very hardy small sized native evergreen tree with a dense canopy.

Foliage:
Oblong glossy dark green leaves with a pale underside.

Flowers:
Nectar rich small yellow flowers in summer.

Fruit:
Small round green fleshy fruit.

Site requirements:
Tolerates a wide range of soils in a full sun or part shade position.
Botanic Name: *Ulmus parvifolia*

Common Names: **Chinese Elm**

Family: **ULMACEAE**

Typical Height: 10-12 metres

Typical Width: 8-10 metres

Typical Growth rate: Moderate.

Typical Habit: A medium domed spreading semi-deciduous tree. It has a two-toned grey, reddish brown scaly bark.

Foliage: Small serrated, leathery dark green leaves which are smooth and shiny on top.

Flowers: Yellow-green papery flowers.

Fruit: Small brown winged seeds that mature in autumn.

Site requirements: This is a very hardy tree that tolerates wind, pollution and a wide range of soil conditions.
Botanic Name:
*Washingtonia filifera*

Common Names:
**American Cotton Palm**

Family:
ARECACEAE

Typical Height:
15-20 metres

Typical Growth rate:
Moderate.

Typical Habit:
A tall palm tree with a thick trunk which flares at the base. Spent fronds can persist on the trunk for some time. Older specimens have smooth grey trunks.

Foliage:
Shiny bright green circular fronds with prominent red brown basal sheaths and cottony threads.

Flowers:
Small white flower clusters at intervals on long flowering branches that arch out well beyond the lower fronds.

Fruit:
Tiny brown berry-like fruits.

Site requirements:
Full sun, however will tolerate some shade, and salt laden winds and poor soil.
Botanic Name:  
Washingtonia robusta

Common Names:  
Mexican Fan Palm

Family:  
ARECACEAE

Typical Height:  
20-25 metres

Typical Growth rate:  
Moderate.

Typical Habit:  
A tall palm tree with a thin trunk which flares at the base. Spent fronds can persist on the trunk for some time. Older specimens have smooth grey trunks.

Foliage:  
Shiny bright green circular fronds with prominent red brown basal sheaths and cottony threads.

Flowers:  
Small white flower clusters at intervals on long flowering branches that arch out well beyond the lower fronds.

Fruit:  
Tiny brown berry-like fruits.

Site requirements:  
Full sun, however will tolerate some shade, and salt laden winds and poor soil.
Tree Data Sheet

Botanic Name: 
*Waterhousea floribunda* 'Green Avenue'

Common Names: 
*Weeping Lilly Pilly*

Family: 
*MYRTACEAE*

Typical Height: 
18-20 metres

Typical Width: 
10-12 metres

Typical Growth rate: 
Fast.

Typical Habit: 
Very hardy medium sized native evergreen tree with a dense pendulous canopy. Formative pruning may be required to achieve clearances and promote a single leader and tree form.

Foliage: 
Glossy dark green leaves with paler underside and slightly wavy margins.

Flowers: 
Nectar rich small white flowers in summer.

Fruit: 
Small round and green berry-like fleshy fruit.

Site requirements: 
Tolerates a wide range of soils but prefers rich moist soil in a full sun or part shade position.
Botanic Name:  
*Xylosma senticosum*  
(syn. *Xylosma congestum*)

Common Names:  
**Xylosma**

Family:  
*SALICACEAE*

Typical Height:  
6-8 metres

Typical Width:  
4-6 metres

Typical Growth rate:  
Fast.

Typical Habit:  
An attractive evergreen small tree with a rounded spreading crown.

Foliage:  
Attractive, weeping, slightly serrated foliage, the orange and bronze tipped new leaves which age to a glossy mid green.

Flowers:  
Inconspicuous small fragrant yellow flowers.

Fruit:  
Small purple-black berry.

Site requirements:  
Tolerates a wide range of soils in a full sun position, and capable of withstanding frequent hard pruning to any shape with minimal impact.
Botanic Name: 
*Zelkova serrata ‘Green Vase’*

Common Names: 
**Japanese Zelkova**

Family: 
**ULMACEAE**

Typical Height: 
10-12 metres

Typical Width: 
8-10 metres

Typical Growth rate: 
Moderate.

Typical Habit: 
An attractive deciduous tree with a wide spreading crown.

Foliage: 
Pointed oblong serrated leaves are mid to dark green, turning yellow in autumn.

Flowers: 
Small greenish flowers borne in spring and lightly perfumed.

Fruit: 
Round insignificant seed pods.

Site requirements: 
Tolerates a wide range of soils in a full sun position.